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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,637	04/13/2000	John R Koza	50291.P009	6771

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EXAMINER

BOOKER, KELVIN E

ART UNIT PAPER NUMBER

2121

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/548,637

Applicant(s)

KOZA ET AL.

Examiner

Kelvin E Booker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on October 17, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Office Action*.

## **DETAILED ACTION**

### ***Response to Amendment***

1. In Amendment "B", filed October 17, 2003 (see paper no. 8), claims one, 8-11 and 23 have been amended. Claims 1-23 are presented for further examination.

### ***Response to Arguments***

2. Applicant's arguments filed October 17, 2003 have been fully considered but they are not persuasive.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claiming the subject matter which applicant regards as the invention.

**Claims 1 and 23** provide for the use of selecting candidate entities which (1) "...*approximately satisfies* a design requirement..." relative to a "...*a preexisting art...*"; (2) selects at least one candidate entity "...*wherein selection is more likely for a first candidate...*"; and (4) create at least one candidate entity "...*by creating a variation in the at least one candidate entity*". **Claim 22** further provides for the use of creating an entity which (1)

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“...*approximately satisfies* a design requirement...” relative to *avoiding a characteristic of a preexisting technology*; and (2) “...produces a structure...” Since the claims do not clearly set forth the steps involved in the methods/processes, it is unclear what methods/processes applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

The use of the aforementioned relative terminology fails to limit the scope of the claims, whereby widening the interpretation to include the general aspect of employing a genetic algorithm in a computer implemented medium. Applicant is reminded that the claims are interpreted in light of the specification, and limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. **Claims 1-23** are rejected under 35 U.S.C. 101 because the invention as disclosed in claim one is directed to non-statutory subject matter. While the claims are in the technological arts, they are not limited to practical applications in the technological arts.

Specifically, the claims focus on a series of steps to be performed on a computer, but the ideas are disclosed abstractly from any particular practical application. In claims 1, 22 and 23, the mere process of creating an entity that “*approximately satisfies*” a design requirement relative to “*a preexisting art*” by means of selecting an entity “*more likely*” to satisfy a

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requirement, is an unclear and indefinite method of creating a new entity. Further, the newly cited entity is defined by a “*variation*” consistent of *avoiding at least one characteristic of a preexisting art*.

To constitutionally interpret the word “process”, the Supreme Court has held that: “\*\*\*A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. \*\*\*The Process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be a secondary consequence.”(emphasis added) *Diamond, Commission of Patents and Trademarks v. Diehr and Lutton*, 209 USPQ 1, 6 (1981) quoting *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1876).

This Constitutional interpretation of the word “process” is a long-standing one that the Supreme Court requires to be applied in interpreting 35 USC 101. *Diamond v. Diehr* at 6. Consequently, the use of that interpretation is Constitutionally required when we interpret the Federal Circuit’s standard that a “new and useful process” is one that produces a useful, concrete, and tangible result”. Cf. *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ2d 1596, 1600-1601 (Fed. Cir. 1998).

As disclosed, the claims merely define the employment of an evolutionary process instantiated in a computer medium as disclosed throughout both Holland, Adaptation in Natural and Artificial Systems (e.g., in particular see chapter 1), and in Koza, Genetic Programming: On The Programming of Computers by Means of Natural Selection (e.g., in particular see chapter 3). The mere process of applying the general steps associated with the natural evolutionary process to artificial systems (e.g. computers) via genetic terminology, provides the foundation for genetic

algorithms, but does not constitute the parameters necessary for a clearly defined design process. The claims, as disclosed, point to the general implementation of genetic algorithms and elements of the evolutionary process, but fail to present a design method which employs elements of the genetic process to further limit the intended application to a specific practical application.

Applicant discloses no “certain substances” that have been “transformed or reduced” in that applicant’s claims disclose no specific computer-readable medium, no manipulation of specific data representing physical objects or activities (pre-computer activity), nor do they disclose any specific independent physical acts being performed by the invention (post-computer activity). The claims merely manipulate abstract ideas in general without limitation to a practical application where “certain substances” are transformed or reduced.

7. In the remarks, Applicants argue in substance that the claims, as amended, particularly point out and distinctly claim, in full, concise and exact terms, the subject matter that Applicant regards as his invention.

8. In response to the Applicant’s argument, the Examiner respectfully disagrees. As noted in the previous Office Action and above, respective to the current amendments, the Applicants focus on *approximately satisfying* a design requirement relative to *at least one characteristic of a preexisting art*, whereby creating a new entity which satisfies the design requirement by avoiding *the at least one characteristic of the preexisting art*. On page seven, in the remarks, the Applicant asserts that “...one with ordinary skill in the art would consider the use of

“approximately” and “more likely” to be definite, particularly, for example in the technology of probability”.

The Examiner agrees, if the assertion is in terms of focusing on a particular problem with a definite scope [e.g., equation with relative variables in accordance to a particular problem/environment], whereby analyzing calculated results within the given scope of the perspective problem provides a firm foundation for generating the bases for a probable event [e.g., probability]. However, in terms of merely selecting an arbitrary characteristic respective of any preexisting art, the Examiner disagrees. As in the aforementioned case, the amended “...at least one characteristic” and “...avoids at least one characteristic of the preexisting art” does not *particularly point out and distinctly claim, in full, concise and exact terms, the subject matter which Applicant regards as his invention.*

Further, the claimed method of creating an entity by *variation* that *approximately satisfies* a design requirement relative to *avoiding at least one characteristic of preexisting art*, fails to provide a “process” in accordance with the constitutionally interpreted word “process” (see prior Office Action, and above 35 USC 101 rejection).

### ***Conclusion***

**9. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.

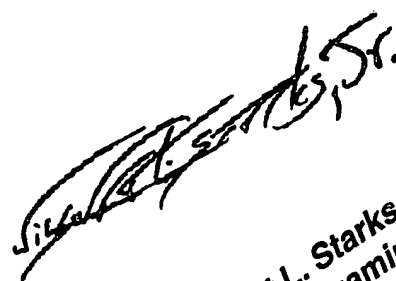
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

**K.E.B.**

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**January 22, 2004**



**Wilbert L. Starks, Jr.  
Primary Examiner  
Art Unit - 2121**